

Effect of Environmental Impact Assessment and Management on the Economic Growth of Developing Countries. Evidence from Nigeria. (1990-2023).



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ABSTRACT: Environmental Impact Assessment (EIA) and its management have become pivotal tools in balancing developmental goals with sustainable environmental practices, particularly in developing countries like Nigeria. This study examines the effects of EIA and environmental management on the economic growth of Nigeria from 1990 to 2023. The study used Autoregressive Distributive Lag (ARDL) technique. The result shows that a long run relationship was observed among the variables, foreign direct investment, trade openness and exchange rate were positive and insignificant in enhancing gross domestic product. While employment rate negatively and insignificantly enhanced gross domestic product growth. The study recommends among other things that government should create enabling business environment by simplifying regulatory procedures, reducing bureaucracy, and enhancing transparency. Government should also diversify export as this will encourage non-oil exports through incentives and support. Develop a comprehensive employment policy and invest in human capital development and Flexible exchange rate regime.

KEYWORDS: Environment, Impact Assessment, Economic Growth, ARDL and Nigeria.

1. INTRODUCTION

Environmental Impact Assessment (EIA) and its management thus have become an integral tool in ensuring that development occurs in a sustainable manner, considering the developing countries where every spurt of economic growth is usually accompanied by considerable environmental degradation. Arguably, this interplay between economic ambition and environmental stewardship may currently be best described in Nigeria, considering the nation's heavy reliance on its oil and gas sector. The legally required EIA process since 1992 seeks to reduce adverse environmental impacts that are brought forth by development projects through early consideration before the projects' approval. Such proactive approach also safeguards the ecosystems, while it contributes significantly to sustainable economic development. Research evidence has established that good practice in EIA can enhance investment potential by ensuring the application of environmental standards, thus building a stable and predictable regulatory environment. Further, when the process of EIA is an active representation of the community, the actual project is more likely to be responsive to the needs of its specific community, increasing social acceptance, and allowing its prospects for long-term viability. However, a few past reviews of EIAs in Nigeria have also been able to point out a number of challenges, including inefficient capacity, corruption, and general weakness in regulatory enforcement, which the latter impedes effectiveness in nature. This has questioned the actual development delivered by EIAs to economic progress, reflected through the works of Akinwumi (2020) and Ibrahim (2023).

Actually, EIAs need to be integrated into development planning in order to build the economic resilience of Nigeria. Indeed, some studies found that stringent EIA practices can stimulate foreign investments by showing commitment to environmental responsibility and regulatory compliance. In addition, effective EIA processes allow for involvement with the community where

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local populations are able to take part in the decision-making that often results in projects which are more socially and ecologically viable. In Nigeria, however, major constraints to the successful implementation of EIAs, such as inadequate technical capacity, political corruption, and weak enforcement of environmental laws and regulations impede the process from realizing its intended objectives.

This paper discusses in detail the elaborate relationship between EIA and economic growth within the context of developing countries, evidence from Nigeria, not only in terms of opportunities offered by EIAs for sustainable development but also barriers that prevent their impact. The current practices and challenges are analyzed in the light of providing a view to Nigeria on how to use EIAs as a tool for a more sustainable and prosperous future.

2. LITERATURE REVIEW

In fact, the Environmental Impact Assessment and management vis-à-vis economic growth relationship has been one in which a number of academic and policy debates have featured prominent within developing countries, such as Nigeria. This literature review synthesizes the current research on the effects of EIA and environmental management on economic growth of developing countries, emphasizing evidence from Nigeria.

The Role of EIA and management in Sustainable Development

It is seen as a tool for sustainable development in that it incorporates environmental aspects into the planning and decision-making apparatus for preparing projects. In the context of Nigeria, EIAs and management would reduce negative environmental impacts associated with rapid industrialization and urbanization. Scholars postulate that where EIA is effectively implemented, the outcomes of such projects would tend to become more feasible and sustainable; hence, justifying economic growth in the long term (Adelekan, 2018). For instance, EIAs have been applied in the oil and gas industries, one of the highest contributors to Nigeria's GDP, by implementing rules that reduce pollution and habitat destruction (Ogunleye & Alabi, 2019 2019).

Economic Benefits of Effective EIA and management Practices

Good EIA, therefore, protects the environment while concurrently contributing to economic development through the attraction of FDI. Investors are more often comfortable investing in those economies where there is a stringent environmental law, as such is perceived to provide stability and minimize risk (Okeowo, 2022). The oil and gas industry in Nigeria has been a beneficiary of high volumes of FDI. However, those projects without credible EIAs face some community opposition and regulatory difficulties that scare away investors (Nwankwo, 2021). On the other hand, projects that are accompanied by comprehensive EIAs are bound to increase the chances of success for a project and include community acceptance for overall economic development as well (Adeola et al., 2019).

EIAs promote environmental considerations within the economic planning process and are thus an enhancement to sustainable development. This will, for instance, include projects on road construction and building that can be conducted with a minimal negative impact on the environment if well assessed, thus encouraging growth in a sustainable manner. Attractiveness to Investment: A sound EIA framework will make Nigeria a better destination for foreign investors. Firms are increasingly interested in investing in those countries or regions which have stringent environmental policies, as these reduce the long-term risks associated with environmental liabilities (Ogunleye & Alabi, 2019). Community Engagement: EIAs often provide the local communities with a means to express their opinions on proposed development projects. The engagement contributes to better project outcomes and engenders community support, which is very necessary to ensure that development projects are successful (Nwankwo, 2021). Long-term Economic Resilience: EIAs are capable of facilitating identification, which is considered very important in lessening environmental hazards that might be associated with neglecting the environment, thereby ensuring long-term economic resiliency.

Challenges to EIA Implementation in Nigeria

Despite these accrued benefits, it would appear that a host of challenges neutralizes the effectiveness of EIAs in Nigeria. Corruption in regulatory bodies serves as a key hindrance where projects are approved against the presentation of inadequate environmental assessment reports. This act alone fosters corruption and leads to public distrust and damage to the environment which would later provoke economic instability. Thirdly, some inefficiency in technical capacity and training amongst EIA practitioners negates the expectation of conducting thorough assessments. The EIA process is also further complicated by a lack of awareness and involvement in local communities, often culminating in very unsatisfactory project outcomes that do not align with community needs.

Inadequate Capacity and Training: A fair number of practitioners lack relevant competencies and training in the performance of EIAs. Such inadequacy could result in poor assessments, which fail to identify significant environmental impacts. Corruption and

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Political Influence: Corruption may make the processes of EIA lack integrity through the approval of projects without proper assessment because of political connections or bribery. Limited Public Awareness: In the absence of proper knowledge about the EIA process among the public, community involvement might be minimal and hence ineffective in ensuring effective stakeholder engagement. Weak Regulatory Framework: Although the EIA Act exists, its implementation is still very weak. Many projects proceed without the necessary assessments; hence, this might increase environmental degradation.

Community Engagement and Its Impact on Economic Growth in Nigeria

Community involvement in the EIA and management process provides an extremely important influence on economic development. Literature evidence has shown that projects emanating from an EIA process involving the local communities stand the possibility of being better targeted to local needs and well accepted by the public. Community engagement through the EIA process gives only the appearance of legitimacy; rather, it serves to ensure that there is social stability, a necessary condition for creating an enabling environment for economic activities. Any project insensitive to these would result in its resistance and, consequently, delay and cost overrun, hence not being conducive to the creation of an enabling environment for economic development.

Successful EIA Practices in Nigeria

Niger Delta Development Projects

Some development projects in the Niger Delta have been able to incorporate EIAs into their planning. For instance, the Niger Delta Environmental Surveyor-NDES-was to check environmental devastation in the region through the study of the effects of oil exploration and thereby made some recommendations on best practices for sustainability. It showed that broad-based assessments, while informing the reduction of environmental devastation, simultaneously promoted economic growth (Olofin, 2020).

Urbanization in Lagos

Lago state has put into practice EIAs and management in major urban development projects such as the Eko Atlantic City. The EIA process within the project had great stakeholder consultations, coming up with an improved design for the said project that reduced adverse environmental impacts. This is one case where it can be proven that an efficient EIA leads to successful urban development with due consideration of environmental sustainability.

Comparative Perspectives from Other Developing Countries

More emphasis is therefore placed on the role of EIA and management in contributing to economic growth through a number of comparative studies from other developing countries. For example, studies in countries like India and Brazil have established that the well-implemented EIA processes ensure environmental upgrade and increase the confidence of the general public in government agencies. The point here is to illustrate that Nigeria actually can learn from global best practices of the implementation of EIA and management, especially on increased transparency and stakeholders' participation. In a nutshell, the literature cites that Environmental Impact Assessment and management plays an important role in promoting sustainable economic growth in Nigeria. Although effective EIAs can result in better environmental quality, improved investment, and community support, there are, among other areas, a number of challenges to be attended to for full potential to be realized. A strengthened EIA process through capacity building, transparency, and community involvement will certainly prepare Nigeria to cope with the attainment of sustainable development and economic resilience out of environmental challenges.

Empirical Review

The interaction between EIA and economic growth has, for years, been a focal point of empirical research, with a main focus on developing countries where the rapid advancement in economic development is straining environmental resources. This review synthesizes empirical studies exploring the effects of EIA and environmental management on economic growth of developing countries, with a particular focus on Nigeria.

EIA and management as a Tool of Sustainable Economic Growth

Various studies point out the importance of EIA and management as a way of achieving sustainable economic development in developing countries. For instance, Adeola et al. (2019) undertook a critical evaluation of the practice of EIA in Nigeria and concluded that projects subjected to proper EIA procedures often record higher levels of environmental performance and development in the local economies. In turn, their work concludes that good EIA practice can reduce the environmental risk from industrial projects, thereby contributing to continuing economic growth through natural resource sustainability.

Along the same line of reasoning, Ogunleye and Alabi (2019) establish how good EIA and good management implementation translates into higher FDI inflow in the oil and gas industry in Nigeria. From the work, it is clear that foreign investors would instead invest in areas that have more stringent environmental laws since such countries are considered less risky. This, therefore, forms

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the basis for the relationship that improved EIA practices lead to an enabling investment environment in the country, which in turn would spur economic growth and capital inflows.

Community Engagement and Economic Outcomes

Community engagement within an EIA process has been empirically tested. Nwankwo, (2021), conducted research on how the impacts of community participation in EIA projects were influencing their performance outcomes in Nigeria. It concluded that projects where the locals were engaged in the EIA processes showed better acceptance and success. This is a scenario that can only be achieved through community engagement, which will help in improving project designs through the use of local knowledge, minimizing unnecessary conflicts because of issues at hand that may be affecting the community and that have not been addressed, hence contributing to economic stability and growth. In support of the above findings, Ogunbanwo (2021) discusses urban development projects in Lagos. The research indeed showed that, when there was a request for community feedback and its incorporation into the EIA process, projects were likely to be completed on time and within budget. Efficiency here means economic benefits, and therefore inclusive practices become very important for sustainable development.

Challenges to EIA Implementation

Empirical evidence also reveals certain setbacks that run contrary to the known benefits of EIA and management in Nigeria. Akinwumi (2020) examined the challenges to EIA implementation and identified corruption as one of the major hindrances. The study established that bribery and political interference have often led to project approvals without due assessments, with resultant environmental degradations coupled with their negative impacts on economic growth. This again underlines the necessity of very vital and strong regulatory frameworks that ensure more accountability in making EIAs effective. Ibrahim (2023) assessed the technical capacity of EIA professionals in Nigeria, which he noted lacks proper training and expertise to conduct thorough assessments. The result showed that strengthened capacity-building processes are, therefore, necessary for quality EIAs and the attainment of sustainable economic growth.

EIA and Economic Performance

Studies consistently confirm that effective EIA contributes to economic performance by promoting sustainable development. For example, Adelekan's (2018) study examined the effectiveness of EIA and its related effect on economic growth in Nigeria. "Results show that projects with extensive EIAs recorded very low rates of environmental degradation, highly beneficial to the local economies by maintaining the natural resources required to generate livelihoods. It, therefore, concluded that an efficient EIA process is very vital in ensuring that economic growth does not come at the expense of environmental health. Along this line, the influence of EIA on investment decisions regarding Nigeria's construction sector was studied by Adewunmi (2020). The research found compliance with EIA regulations to reduce environmental risks and increased investor confidence. Projects that did apply EIA procedures tended to receive a higher percentage of both domestic and foreign investment. The implication of a well-conducted EIA would be that it acts as a promoter of economic growth.

The Role of Public Participation

Public participation is regarded as an increasingly major ingredient of the EIA and management process. Most empirical studies have found that local participation in EIAs generally generates a project that is more acceptable socially with better economic prospects. For example, Nwankwo (2021) emphasized that projects that integrated community needs into the EIA process generated less delay and conflict, with less hindrance to successful implementation, translating into improved economic returns. It showed that local wisdom would always provide better information for decision-making that would make the projects responsive to the needs of the communities. Ogunbanwo (2021) supported these findings when he looked into urban development projects in Lagos, finding that stakeholder engagement in EIA processes contributed to better project outcomes. Community engagement increased project success rates and ensured that people took ownership of projects, thus contributing toward ensuring economic growth was sustained.

Impact of EIA and management on Sectoral Development

The nuanced effects of EIA and management on economic growth could be better reflected in sector-specific studies. Such a recent analysis regarding the agricultural sector has been done by Ogundipe et al. (2022), where it was found that EIAs contributed to land use in a sustainable manner which resulted in increased agricultural productivity. The study showed that incorporating environmental assessment into agricultural planning has managed so far not only to reduce adverse environmental impacts but also to enhance food security and resilience in rural communities' economies.

Comparative Evidence from Other Developing Countries

The comparisons done with other developing countries provide an overview of the potential that EIA and management possesses to bring about changes in economic development. Overall, findings from countries like Brazil and India indicate that good EIA and management frameworks facilitate better environmental governance and generally increase public confidence in government

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institutions. These findings consequently have implications for the fact that Nigeria could borrow from these countries in terms of best practices, especially relating to aspects of regulatory transparency and community engagement strategies. Empirical evidence from other developing countries also sheds light on the potential influence of EIA and good management on economic growth. For instance, studies in India and Brazil indicate that adequately organized EIA processes may lead to better environmental management, thus offering enhanced investment prospects for projects. The above findings also suggest that through imported lessons from global best practices, Nigeria can refine its EIA framework in order to reap the maximum economic benefits.

Put differently, it is relevant to underline that the empirical literature has indicated EIA and proper management as a tool that can facilitate attainment of sustainable economic growth in Nigeria. Good practices in EIA have the capability to create better environmental performances, investment, and improve community acceptance in addition to other projects in developing countries. Nevertheless, challenges like corruption and lack of adequate technical capacity should be surmounted if developing countries are to maximize full potential benefits accrued from EIAs. Increasing training, community involvement, and reforming the mechanisms for EIA practices will be vital in reaching a goal of sustainable development and economic resilience for Nigeria.

Theoretical Review

The theoretical framework of EIA and management with regard to economic growth, most especially in developing nations such as Nigeria, encompasses various models and concepts that cumulatively aimed at linking environmental management to economic development. This review reveals the critical theoretical perspectives informing the relationship between EIA, management and economic growth, focusing on insights relevant to the Nigerian economy.

Theory of Sustainable Development

The concept at the heart of the discussion on EIA and management is sustainable development. This is a model that makes striking balancing between economic growth and environmental protection. The Brundtland Commission defined it in the following words: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987). This framework now makes it important that there are EIAs, since this would ensure that the pursuit of economic activities will be done in a manner that does not deplete natural resources or degrade environmental quality. Application of the principles of sustainable development through robust EIA practice, therefore, is necessary in Nigeria, where economic activities, especially those in the oil and gas sector, are usually very prone to environmental hazards.

The Institutional Theory of EIA

Institutional theory provides a framework in which the EIA and management processes are shaped with regard to regulatory frameworks, organizational structures, and stakeholder interactions. According to North, institutions-the rule, norm, and organization guiding the interactions within a society-play an important role in determining economic output. Considering the case of Nigeria, for example, institutional factors affect how well EIA processes work in terms of the quality of governance, whether regulations have been enforced, and the level of participation by the public. Indeed, good institutional frameworks have been shown to spur the quality of EIAs, which in turn would lead to better environmental management and then economic growth that is more sustainable.

Public Participation Theory

Public participation is considered a cardinal principle underlying the EIA process from the standpoint of democratic theory and social justice. Arnstein's (1969) Ladder of Citizen Participation recognized a number of levels of involvement on the part of the public, ranging from manipulation to various forms of citizen control. In many instances, effective EIA practices in Nigeria need meaningful engagement with the affected community for better project designs that may be socially acceptable. Communities' involvement in the process will make EIAs more responsive to the concerns of the locals. Therefore, projects are likely to be economically viable and ecologically sustainable. Such participation by a community also supports a number of theories related to social capital, which say that involvement of a community can result in improving ways through which the collectives make decisions and can promote trust (Putnam, 1993).

Economic Theories of Environmental Management

The relationship between, environmental management and economic growth can also be brought under scrutiny using various economic theories, including the EKC hypothesis. The EKC hypothesis assumes that, with the development of an economy, environmental degradation first increases up to a certain income level before starting to decline. This theory indicates that an efficient EIA process may enable a developing nation like Nigeria to transition to a sustainable practice before it gets too late and the degradation of the environment gets too high. Through appropriate EIAs, early identification and mitigation of impacts on the environment can be made possible, possibly altering the path of economic growth in Nigeria towards sustainability (Ogunleye & Alabi 2019).

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The Role of Institutional Economics

Institutional economics further explains the connection between EIA and economic growth in relation to how institutional arrangements affect environmental policies and practices. For example, Coase's Theorem states that if property rights are well-defined and transaction costs low, then parties can bargain effectively to resolve the problem of externalities. The enhanced EIA process may provide detailed information regarding property rights and responsibility. It would, in turn, lead to more efficient negotiations among stakeholders: community, government, and investor, hence leading to better environmental management along with better economic outcomes.

The theoretical standpoints shared in the paper paint the multi-dimensional relationship existing between EIA and economic growth regarding developing countries such as Nigeria. The theory of sustainable development calls for a common interface between environmental thought and economic planning, while institutional theory stresses the need for governance and regulatory mechanism. Public participation theory supports the involvement of community involvement in EIA, while economic theories provide lessons on how to manage development and environmental sustainability trade-offs. These can thus be used to develop theoretical insights into how EIAs might be used as a tool for policymakers to help realize sustainable economic growth in Nigeria.

3. METHODOLOGY

This is a mixed-methods study that attempts to evaluate the impact that environmental impact assessment and management have on the economic growth of developing countries with evidence drawn from Nigeria. The methodology contains both qualitative and quantitative components, which helps in comprehensively understanding the dynamics at play in this study. The quantitative part of this research design follows a descriptive correlational analysis design that shall enable testing the relationships of EIA and good management practices to measurable economic indicators such as Gross Domestic Product (GDP), foreign direct investment, trade openness, exchange rate and employment rates. Quantitative data come from several key databases and governmental reports. Data sources, in this respect, are from: National Bureau of Statistics, Federal Ministry of Environment, World Bank and United Nations Development Programme (UNDP). Quantitative analysis covers a period from 1990 to 2023, allowing the observation of trends and correlations between EIA practices and economic growth metrics.

Model Specification

$$GDP = \beta_0 + \beta_1 TO + \beta_2 FDI + \beta_3 Employment + \beta_4 EXCR + \epsilon$$

Where:

Economic Growth refers to GDP growth.

TO refers to Trade Openness.

EXCR refers to Exchange Rate

FDI captures foreign direct investment inflows.

EMPL represents employment rates in relevant sectors.

ϵ is the error term.

Limitations

This study realizes probable limitations, like the issue of availability and reliability of data, especially relating to implementation level of EIA and resultant economic impacts. Focusing on a single country, which is Nigeria, might have limited generalizability to other developing countries, though comparative insights will be drawn from the literature.

4. RESULTS AND INTERPRETATION

Unit Root Test

In environmental impact assessment analysis, the unit root test is used to test time series data stationarity because most economic variables are dependent. The Stationarity properties of the variables included in the models were tested using the Augmented Dickey Fuller and the results are presented on Table 1.

Table 1: Result of Unit Root of Variables

Variable	ADF order of integration	0.05 ADF critical values	ADF test Statistic
GDP	I(0)	-3.7364	-2.9540
FDI	I(1)	-6.9805	-2.9471
TO	I(1)	-5.4450	-2.9604

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EMPL	I(1)	-4.5801	-2.9639
EXCR	I(1)	-5.3152	-2.9604

Source: Researcher's Computation E-Views, 10.0

Above table shows the order of integration-stationarity for the study series. In the ADF test all series except GDP were stationary at level. FDI, TO, EMPL and EXCR attained stationarity at first difference after undergoing further treatment. So all series were stationary at level and first differencing. Since our series was stationary at level, 1(0), and first differencing 1(1), we should study the long-term link between environmental impact assessment on the growth of Nigeria's economy. The researcher thereby used ARDL long and short run tests to verify the result.

ARDL Bounds Test

Bounds test was applied to investigate the long-run relationship between environmental impact assessment and economic growth. This is because the bounds test allows a mixture of I(0) and I(1) variables as regressors, that is, the order of integration of appropriate variables may not necessarily be the same. The following hypothesis is formulated to determine the long-run relationship between the variables

$H_0 = \beta_1 = 0$ (no long-run relationship)

Against the alternative hypothesis

$H_0 \neq \beta_1 \neq 0$ (a long-run relationship exists)

Decision Rule

If the computed F-ststistic is smaller than the lower bound value, then the null hypothesis is not rejected and it concludes that there is no long-run relationship. Conversely, if the computed F-statistic is greater than the upper bound value, then there is a long-run level relationship. On the other hand, if the computed F-statistic falls between the lower and upper bound values, then the results are inconclusive.

Table 2 Results of ARDL/Bounds Test

Test Statistic	Value	k	Significance	Critical Value Bounds	
				I(0) Bound Lower	I(1) Bound Upper
F-statistic	3.505641	4	10%	2.20	3.09
			5%	2.56	3.49
			2.5%	2.88	3.87
			1%	3.29	4.37

Source: Researcher's Computation E-Views, 10.0

The F-statistic value of 3.505641 is higher than the 5% critical values at both I(0) and I(1). This means that we reject the null hypothesis and come to the conclusion that the variables are related over the long term. In conclusion, there is a long-term link between Nigeria's economy and the environmental impact assessment.

ARDL Estimation

Table 3: ARDL Cointegrating and Long Run Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.513746	1.287935	0.398892	0.6932
TO	0.149118	0.257032	0.580152	0.5668
EMPL	-1.305470	1.220163	-1.069914	0.2945
EXCR	2.579522	4.890870	0.527416	0.6024
C	5.625595	16.39670	0.343093	0.7343

$EC = GDP - (0.5137*FDI + 0.1491*TO - 1.3055*EMPL + 2.5795*EXCR + 5.6256)$

Source: Researcher's Computation E-Views, 10.0

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Table 3 presents the long-run estimate of the relationship between economic growth and environmental impact assessment proxied with foreign direct investment, while trade openness, employment rate in the relevant sectors, and exchange rate are employed as control variables in the model.

The result clearly indicated from the model that FDI is an insignificant and positive factor in explaining changes in economic growth—a fact which is at variance with the endogenous growth theory, which posits that FDI is one of the most important drivers of economic growth. The ratio of FDI is positive but insignificant in explaining changes in economic growth. That implies that with a 1% increase in FDI, the gross domestic product will approximately be 51.37%, which in turn enhances economic growth. The outcome is consistent with Shehu and Bashir 2023 and Saibu and Mesagan 2016. This indicates that the ratio of FDI alone does not exogenously impact growth.

However, the trade openness is found to be positive and insignificant in the study and on the average 1% increase in trade openness while keeping other explanatory variables constant boosts the GDP by 14.91%. This is also expected as Nigeria is an import dependent country vis-à-vis its export of crude oil in commercial quantity.

Its coefficient, the employment rate, is negative and insignificant in explaining changes in economic growth. That is not unexpected since economic theory would dictate that unemployment will detract from economic growth since it erodes purchasing power. This is because the labour market in Nigeria is of low productivity, a large percentage of Nigeria's labour force operates within the informal sector, and too large a number of workers lack useful skills for making meaningful contribution to GDP, while the economy is not diversified, leading to limited opportunities for employment in high-productivity sectors.

The result regarding the exchange rate shows a long-run coefficient value of 2.5795 with corresponding p-values of 0.6024 respectively. This suggests that the exchange rate is statistically insignificantly integrated with economic growth proxied by GDP in the long run. This is an indication that with a proportional increase in the exchange rate, a corresponding proportional increase in Gross Domestic Product occurred but was insignificantly achieved in the long run. It is rooted in the fact that this persistent dominance of the foreign currencies, such as the USD (\$), British Pound sterling (£), and other hard currencies over and above the local currency, is a source of concern and may be devastating to the economy at large. It is deduced that a relative loss of value of the local currency to foreign currency implies a volatile foreign exchange market characterized by persistence volatility in the foreign exchange rate. Consequently, the exchange rate shocks positively and insignificantly co-integrate gross domestic product in the long run. This is ascertained from the p-value which is not significant at 5% significance level. The negative contribution of exchange rate on the GDP of the Nigeria economy goes in line with the works of Andrew and Onerhime (2024), kolapo, Oke, and Olaniyan (2018). Exchange rate is which is expected to influence the level of gross domestic product in Nigeria. Thus, exchange rate whether favourable or unfavourable, might impact very strongly on gross domestic product in Nigeria.

Heteroskedasticity Test

This is also called the residual analysis. It is compulsory to check for the presence of heteroscedasticity in order to check if the model built can explain some variations in the response variable which eventually shows up in the residual. If there is a problem of heteroskedasticity, there is high possibility of the model been unstable and inefficient to predict the phenomenon. From the result in Table 4; the p-value of the test is greater than 5% significant level, which implies that the model specified is free of heteroskedasticity problem.

Table 4

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.023448	Prob. F(5,26)	0.4244
Obs*R-squared	5.262411	Prob. Chi-Square(5)	0.3847
Scaled explained SS	10.64489	Prob. Chi-Square(5)	0.0589

Source: Researcher's Computation E-Views, 10.0

Multicollinearity Test – Variance Inflation Factor (VIF)

As previously stated, this test is performed to ensure that the variables are not multicollinear (in line with the assumption of the OLS estimation technique).

Table 5: Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF

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GDP(-1)	0.028786	2.938053	1.339319
FDI	0.925815	6.785177	1.972167
TO	0.036782	304.3908	5.415971
EMPL	0.769228	315.9615	3.493805
EXCR	12.27174	151.3015	7.938271
C	141.6994	421.3807	NA

Source: Researcher’s Computation E-Views, 10.0

Generally, the result from the table shows that problem of multi-collinearity is not anticipated. Though, a further test was carried out to ascertain this condition. From the above table, the variance inflation factor show that Uncentered VIF values are greater than the Centre VIF values. This shows the absence of multi-collinearity problem.

Stability Tests

For testing the stability of the long-run coefficients along with the short-run dynamics, the cumulative sum (CUSUM) and cumulative sum of square applied.

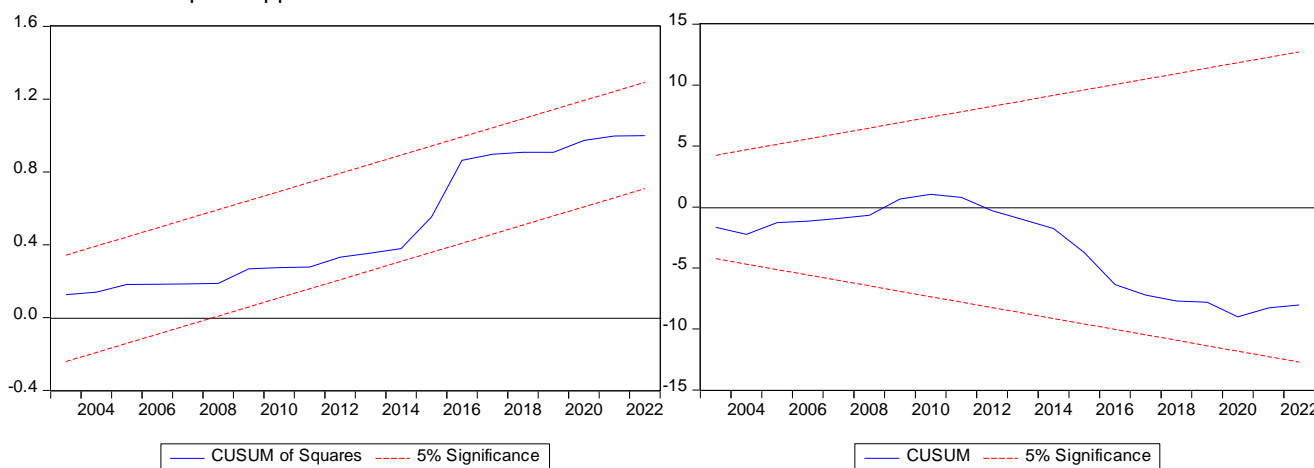


Fig. 1: Cumulative Sum (CUSUM)

Source: Researcher’s Computation E-Views, 10.0

A graphical illustration of CUSUM and CUSUMSQR is exposed in Figures 1 above. The plot of the CUSUM and CUSUMSQR is within the boundaries, and hence these statistics prove the stability of the long-run coefficients of the regressors that have an effect on gross domestic product (GDP) in Nigeria within the period.

5. CONCLUSION AND RECOMMENDATIONS

Integrating EIAs and management into Nigeria's development framework will provide critical opportunities for the consolidation of sustainable economic growth. While very important in impact, the benefits come hand in hand with challenges such as capacity building, corruption, and regulatory enforcement. Strengthening EIA practices will, therefore, help Nigeria align economic ambitions with environmental sustainability in pursuit of a resilient and equitable future. Recent literature on foreign direct investment stipulates that FDI's positive impact on economic growth is with regard to the prevailing local conditions in an economy as well as its absorptive capacity. The study therefore recommends the provision of improvement to business environment. This is because it will ease regulatory procedures by reducing bureaucratic barriers to boost transparency. Diversification of the export base is also recommended and that will encourage non-oil exports through the use of incentives and support. Developing a broad employment policy is worth consideration, along with investing in human capital development. The flexible exchange rate regime should be supplemented with appropriate policies that could save the output growth of the economy in the long run.

REFERENCES

1) Adelekan, I. O. (2018). Environmental Degradation and Economic Growth in Nigeria. *Environmental Science & Policy*, 86, 71-81.

Effect of Environmental Impact Assessment and Management on the Economic Growth of Developing Countries. Evidence from Nigeria. (1990-2023).

- 2) Adeola, A. O., Ogundipe, A. A., & Okeowo, O. (2019). The Role of Environmental Impact Assessment in Sustainable Development: Evidence from Nigeria. *Sustainability*, 11(3), 620.
- 3) Adewunmi, A. A. (2020). Assessing the Impact of Environmental Impact Assessments on Sustainable Development in Nigeria. *Journal of Environmental Management*, 250, 109501.
- 4) Arnstein, S. R. (1969). A Ladder of Citizen Participation. *Journal of the American Planning Association*, 35(4), 216-224.
- 5) Coase, R. H. (1960). The Problem of Social Cost. *Journal of Law and Economics*, 3, 1-44.
- 6) Fischer, T., Schlegel, A., & Weidema, B. (2020). Environmental Impact Assessment in Developing Countries: Lessons from Comparative Studies. *Environmental Impact Assessment Review*, 80, 106327.
- 7) Glasson, J., Therivel, R., & Chadwick, A. (2012). *Introduction to Environmental Impact Assessment*. Routledge.
- 8) Grossman, G. M., & Krueger, A. B. (1995). Economic Growth and the Environment. *Quarterly Journal of Economics*, 110(2), 353-377.
- 9) Ibrahim, M. (2023). Strengthening Environmental Regulations in Nigeria: The Role of the EIA Process. *International Journal of Environmental Policy and Decision Making*, 7(2), 95-107.
- 10) National Bureau of Statistics (NBS), Nigeria. (2023). *Annual Economic Report*. Retrieved from [NBS website].
- 11) Nwankwo, E. (2021). Community Participation in Environmental Impact Assessment: A Case Study in Nigeria. *Journal of Environmental Policy & Planning*, 23(2), 123-135.
- 12) Ogunbanwo, O. (2021). Urban Development and Environmental Impact Assessment in Lagos: A Case Study of Eko Atlantic City. *Nigerian Journal of Environmental Management*, 10(1), 34-47.
- 13) Ogundipe, A. A., & Adeola, A. O. (2022). The Role of EIA in Agricultural Development: A Case Study from Nigeria. *Sustainable Agriculture Reviews*, 48, 121-137.
- 14) Ogunleye, I. O., & Alabi, A. (2019). Foreign Direct Investment and Environmental Regulations in Nigeria: The Role of Environmental Impact Assessment. *Journal of African Business*, 20(1), 45-61.
- 15) Okeowo, O. (2022). Corruption and the EIA Process in Nigeria: Implications for Sustainable Development. *Journal of Environmental Law*, 34(1), 45-67.
- 16) Olofin, E. (2020). The Niger Delta Environmental Survey: A Model for Sustainable Development in Oil-Producing Regions. *Journal of Oil and Gas Law and Policy*, 7(3), 215-233.
- 17) Olowofela, A., Akintayo, I., & Abubakar, A. (2021). Public Awareness and Participation in Environmental Impact Assessment in Nigeria: A Case Study. *Environmental Management*, 67(4), 580-590.
- 18) Putnam, R. D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press.
- 19) United Nations Development Programme (UNDP). (2021). *Human Development Reports*. Retrieved from [UNDP website].
- 20) World Bank. (2022). *World Development Indicators*. Retrieved from [World Bank website].



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